

[illegible]

ATGATGTGCTTAAGATCCTAAGAAATAGCCCTGGCGATTTTGGCTGGGTGGGCACTCTGT	60
M M C L K I L R I S L A I L A C G W A L C	(20)
TCTGCCAACTCTGAGCTGGGCTGGACACGCAAGAAATCCTTGGTTGAGAGGGAACACCTG	120
S A N S E L G W T R K K S L V E R E H L	(40)
AATCAGGTGCTGTTGGAAGGAGAAACGTTGTTGGCTGGGGGCCAAGGTTTGAAGACCCAGA	180
N Q V L L E G E R C W L G A K V R R F R	(60)
GCTTCTCCACAGCATCACCTCTTTGGAGTCTACCCACAGAGGGCTGGGAACCTACCTAAGG	240
A S P Q H H L F C V Y P S R A G N Y L R	(80)
CCCTACCCCTGGGGGAGCAAGAAATCCATCATAACAGGACGCAGCAAAACAGACACTGAA	300
P Y F V G E O E I H E T C R S K P D T E	(100)
GGAAATGCTGTGAGCCTTGTTCCTCCCCAGACCTGACTGAAAATCCAGCAGGACTGAGGGGT	360
G N A V S L V P P D L T E N P A C L R G	(120)
GCAGTTGAAGAGCCGCTGCCCCATGGGTAGGGGTAGTCTCTATTGGGCAATCTGAGCTG	420
A V E E P A A P W V G D S P I G O S E L	(140)
CTGGGAGATGATCACCTTATCTCTCCCAATCAAGATCCAAGGAGTCTCTAGGTGAGGCC	480
L G D D D A Y L G N Q R S K E S L G E A	(160)
GGGATTCACAAACCTCAGCCATGGGTGCACTACTACCAAGGCAATTTTCACAAACCTG	540
G I Q K G S A M A A T T T A I F T T L	(180)
AACGAACCCAAACAGAGACCCAAAGGAGGGGCTGGCCCAACTCCAGGCAGCGTGGCCAA	600
N E P K P E T Q R R G W A K S R Q R R Q	(200)
GTGTGGAAGAGGCGGGCGGAAGATGGGCAGGAGACTCCGGTATCTCTTCACATTTCCAA	660
V W K R R A E D G Q G D S G I S S H F Q	(220)
CCTTGGCCCAAGCATTCCTTARACACAGGGTCAAAAAGAGTCCACCGGAGGAAAGCAAC	720
F W P K H S L K H R V K K S P P E E S N	(240)
CAAAATGGTGGAGAGCGCTCCTACCGAGAAGCAGAGACCTTTAACTTCCAGTAGGACTG	780
Q N G G E G S Y R E A E T F N S Q V G L	(260)
CCCATCTTATACTTCTCTCGCAGGCGGGAGCGGCTGCTGCTGCTCCAGAGTGCTGGCT	840
F I L Y F S G R R E R L L L R P E V L A	(280)
GAGATTCCCCGGGACCCCTTCACTCTGAAGCCTCCCTTAACCCGAGGGAGGACAGAAAC	900
E I P R E A F T V E A W V K F E G G Q N	(300)
AACCCAGCCATCATCGCAGGTGTGTTTGATAACTGCTCCCACTGTCTAGTGACAAAGGC	960
N P A I I A C V F D N C S H T V S D K G	(320)
TGGCCCTGGGGATCCGCTCAGGGAAGGACAAGGGAAGCGGGATGCTCGCTTCTTCTTC	1020
W A L G I R S G K D K G K R D A R F F F	(340)
TCCCTCTGCACCGACCGCGTGAAGAAAGCCATCTTGATTAGCCACAGTTCGCTACCAA	1080
S L C T D R V K K A T I L I S H S R Y Q	(360)
CCAGGCACATGGACCCATGTGCGAGCCACTTACGATGGACCGGCACATGGCCCTGTATGTG	1140
P G T W T H V A A T Y D G R H M A L Y V	(380)
GATCCCACTCAGGTGGCTACCACTCTAGACCAGTCTGGTCCCTGAAACGCCCTTCATG	1200
D G T Q V A S S L D Q S G F L N S P F M	(400)
GCATCTTGGCGCTCTTTCTCTCTCCCGGAGACAGCTCTCACCATCGGCACTATTTCCGT	1260
A S C R S L L L G G D S S E D G H Y F R	(420)
GGACACCTGGGCACACTGGTTTTCTGCTCGACCGCCCTGCCACAAACCCATTTTCAGCAC	1320
G H L C T L V F W S T A L P Q S H F Q H	(440)
AGTTCTCAGCATTCAAGTGGGGAGGAGGAAGCGACTGACTTGGTCTTGACAGCGAGCTTT	1380
S S O H S S G E E E A T D L V L T A S F	(460)
GAGCCTGTGAACACAGAGTGGGTTCCCTTTAGAGATGAGAAGTACCCACGACTTGAGGTT	1440
E P V N T E W V P F R D E K Y P R L E V	(480)
CTCCAGGGCTTTGAGCCAGAGCCTGAGATTCTGTGCGCTTTGCAGCCCCCACTCTGTGGG	1500
L Q G F E F E F E I L S P L Q P P L C G	(500)
CAACACTCTCTGACAATGTGGAATTCATCTCCAGTACAATGGAATACTGCCCCCTTCGG	1560
Q T V C D N V E L I S Q Y N G Y W P L R	(520)
GGAGAGAAGGTGATACGCTACCAGGTGGTGAACATCTGTGATGATCAGGGCCTAAACCCC	1620
C F K V I R Y Q V V N I C D D E G L N F	(540)
ATTGTGAGTGAGGAGCAGATTGCTCTGCAGCAGAGGCACCTGAATGAGGCCTTCAGCCGC	1680
I V S E E O I R L Q H E A L N E A F S R	(560)
TACAAATCATGCTGGCAGCTGAGCGTCCACCAGGTCCACAATTCCACCCTGCGACACCGG	1740
Y N I S W Q L S V H Q V H N S T L R H R	(580)
CTTGTGCTTGTCAACTCTGAGCCCAAGCAAGATTGCAATGACCATTTGTGACCCCCGAGTGT	1800
V V L V N C E P S K I G N D H C D E E C	(600)

Figure 1 (page 2 of 3)

GAGCACCCTACTCAGGCTATGATCCCCCTGACTGCGGCTGCAAGGCGGCTGCTACTCC	1860
E H P L T G Y D G G D C R L Q G R C Y S	(620)
TGGAACCGCAGGGATGGGCTCTGTACGTGGAGTGTAAACAACATGCTGAACGACTTTGAC	1920
N N R R D C L C H V E C N N M L N D F D	(640)
GACCGAGACTGCTGCGACCCCCAGGTGGCTGATGTGCGCAAGACCTGCTTTGACCCTGAC	1980
D G D C C D P Q V A D V R K T C F D P D	(660)
TCACCCAGAGGGGCATACATGATGTGAAGGAGCTGAAGGAGGCGCTGCACTGAACAGT	2040
S P K R A Y M S V K E L K R A L Q L N S	(680)
ACTCACTTCCTCAACATCTACTTTGCCAGCTCAGTGGGGAAGACCTTGCAGGTGCTGCC	2100
T M F L N I Y F A S S V R E D L A G A A	(700)
ACCTGGCTTCCGACAAAGCAAGCTGTCACTCACTGGGTGGCATTGTCTTCAGCCCAGCA	2160
T W P W D K D A V T H L G G I V L S P A	(720)
TATTATGGGATCCCTCCGACACCGACACCATCATCATGAAGTGGGACATGTTCTGGA	2220
Y Y G M P G H T D T M I H E V G H V L G	(740)
CTCTACCATGTCTTTAAAGGAGTCACTGAAGACAAATCCTGCAATGACCCCTCCAAAGCA	2280
L Y H V F K G V S E R E S C N D P C K E	(760)
ACAGTGGCATCCATGGAAACGGGAGACCTCTGTGCGGACACCGCCCCCACTCCCAAGACT	2340
T V P S M E T C D L C A D T A P T P K S	(780)
GAGCTGTGCGGGGACCCAGAGCCCTACTAGTGACACCTGTGGCTTCACTCGCTTCCCAGGG	2400
E L C R E P E P T S D T C G F T R F P G	(800)
GCTCCGTTCACTACTACTGAGCTACACGGATGATGACTGCACTGACAACTTCACTCCT	2460
A F F T N Y M S Y T D D N C T D N F T P	(820)
AAOCAAATCCCCCAATGCAATGCTATTTGGACCTAGTCTATCAGCAGTGGACTGAAAGC	2520
N Q V A R M H C Y L D L V Y Q Q W T E S	(840)
AGAAACCCACCCCGATCCGCAATTCACCTATCGTCATGGGACAGACCAACAAATCCCTC	2580
R K P T P I P I P P M V I G Q T N K S L	(860)
ACTATCACTGGCTGCTCCTTATTAGTGGAGTTCTATATCACAGGGCCTGACCCACCTTC	2640
T I H W L P P I S G V V Y D R A S G S L	(880)
TGTGGCGCTTGCACTGAAGATGGGACCTTTCTGAGTATGTGCACACAGCTTCTCCCGG	2700
C G A C T E D C T F R Q Y V H T A S S R	(900)
CGGCTGTGTGACTCCTCAGGTTATGGACCCAGAGGAGGCTGTGGGGCCTCCTGATGTG	2760
R V C D S S G Y W T P E E A V G D D D V	(920)
GATCAGCCCTGCGAGCCAAAGCTTACAGGCTGGAGCCCTGAGGTCCTCTGTACCATG	2820
D Q P C E P S L Q A W S P E V H L Y H M	(940)
AACATCACCCCTCCCCCTGCCCCACAGAGGCTGTAGCTTGGAGCTGCTCTTCCACACCCG	2880
N M T V P C F T E G C S L E L L F Q E P	(960)
GTCCAAGCCGACACCCCTCACCCCTGCTGGTCACTTCTCTTCTCATCGAGTCTCTCGAGGTG	2940
V Q A D T L T L W V T S F F M E S S Q V	(980)
CTCTTTGACACAGAGATCTTGCTGCAAAACAGGAGTCACTGACCCCTGCCCCCTTACAC	3000
L F D T E I L L E N K E S V H L G F L D	(1000)
ACTTTCTGTGACATCCCACTCACCATCAAACCTGCACGTGGAGTGGAGGTGTGCGGGGTG	3060
T F C D I P L T I K L H V D G K V S G V	(1020)
AAAGTCTACACCTTTGATGAGAGGATAGAGATTGATGACCACTCTGACTTCTCAGCCC	3120
K V Y T F D E R I E I D A A L L T S Q P	(1040)
CACAGTCCCTTGTGCTCTGGCTGCAAGGCTGTGAGGTACAGGTTCTCCGCGATCCCCCA	3180
H S P L C S G C R P V R Y Q V L R D F P	(1060)
TTTGCCAGTGGTTTGGCCGTTGGTGGTGACACATTCTCACAGGAAGTTCACGGACGTGGAG	3240
F A S G L P V V V T H S H R K F T D V E	(1080)
GTCACACCTGGACAGATGTATCAGTACCAAGTTCTAGCTGAAGCTGGAGGAGAAGTGGGA	3300
V T P C Q M Y Q Y Q V L A E A G G E L G	(1100)
GAAGCTTCGCTCTCTGTAACCAATTCATGAGGCTCTTATTGTGGAGATCCCAAGCTC	3360
E A S D P D L N H I E C A P Y C G D G K V	(1120)
TCAGAGAGACTGGGAGAAGAGTGTGATGATGGAGACCTTGTGAGCGGAGATGGCTGCTCC	3420
S E R L G E E C D D G D L V S C D G C S	(1140)
AACCTGTGTGAGCTGGAGGAAGGTTCAACTGTGTAGGAGAGCCAAGCCTTTGCTACATG	3480
K V C E L E E G F N C V G E P S L C Y M	(1160)
TATCACCCACATCCCATATGTGAACCTTTTACACAAAAACAGCATTGTAGACTGTGGC	3540
Y E G D G I C E P F E R K T S I V D C G	(1180)
ATCTACACTCCCAAGGATACTTGGATCAATGGGCTACCCCGCTTACTCCTCTCATGAA	3600
I Y T P K G Y L D Q W A T R A Y S S H E	(1200)

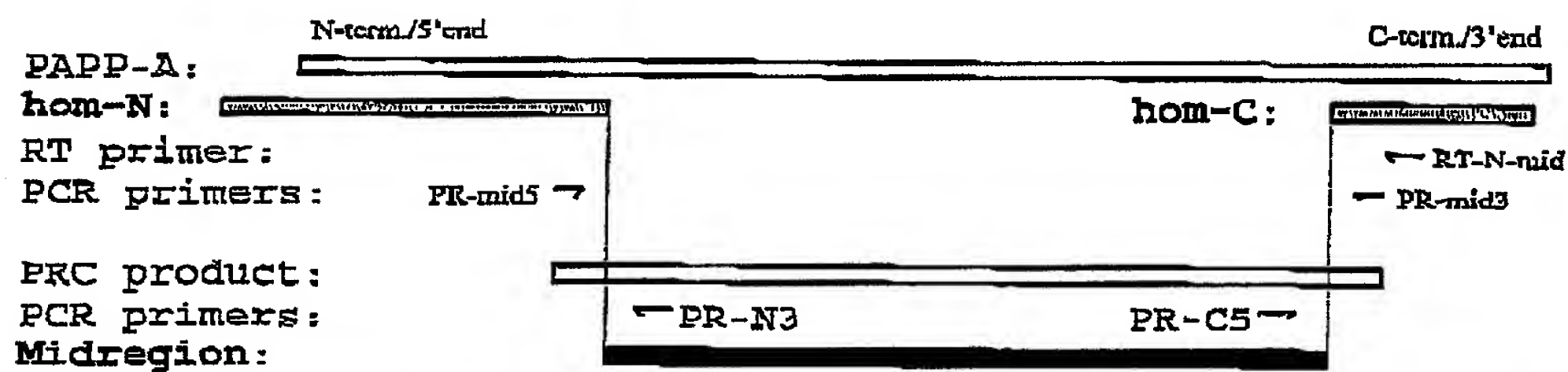
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Figure 1 (page 3 of 3)

GACAACAACAACTGTCTCTTTCTTTGGTAAGTGGAGAACCTCATTCCCTAATTTGCACA	3680
D K K K C P V S L V T G E F H S L I C T	(1220)
TCATACCATCCAGATTACCCAACCAACCGTCCCCCTAACTGGCTGGTTTCCCTGTGTGGC	3720
S Y H P D L P N H R P L T G W F P C V A	(1240)
AGTGAAATGAAACTCAGGATGACAGGAGTGAACAGCCAGAAGGTAGCCTGAAGAAAGAG	3780
S E N E T Q D D R S E Q P E G S L K K E	(1260)
GATGAGGTTTGGCTCAAAGTGTGTTTCAATAGACCAGGAGAGGCCAGAGCAATTTTATT	3840
D E V W L K V C F N R P G E A R A I F I	(1280)
TTTTTGACAACCTGATGGCCTAGTTCCCGGAGAGCATCAGCAGCCGACAGTGAATCTCTAC	3900
F L T T D G L V P G E H O O P T V T L Y	(1300)
CTCACCCTATCTCCGTGGAGCAACCACTCTCTTGGAACTTGGACTGTCTATGCCAGCAT	3960
L T D V R G S N H S L G T Y G L S C O H	(1320)
AATCCACTCATTATCAATGTGACCCATCACCAGAATGTCTTTTCCACCATAACCACTCA	4020
N P L I I N V T H H Q N V L F H H T T S	(1340)
GTGCTGCTGAATTTCTCTATCCCCACGGCTCCCATCTCAGCTCTCCCTCTAAGGACATCC	4080
V L L N F S S P R V G I S A V A L R T S	(1360)
TCCCGCATTTGGTCTTTTGGCTCCCACTAAGTGCATCTCAGACCAACCAAGGCAATCAT	4140
S R I G L S A P S N C I S E D E G Q N H	(1380)
CAGGGACAGAGCTGTATCCATCGGCCCTGTGGGAAGCAGGACAGCTGTCCGTCTATGCTG	4200
Q G Q S C I H R P C G K Q D S C P S L L	(1400)
CTTGATCATGCTGATGTTGGTGAAGTGTACCTCTATAGGCCAGGTCTCATGAAGTGTGCT	4260
L D H A D V V N C T S I G P G L M K C A	(1420)
ATCACTTCTCAAACGGGATTTGCCCTTCAGGCCAGCAGTGGGCACTACATCAGGCCCATG	4320
I T C Q R G F A L Q A S S G Q Y I R F M	(1440)
CACAACCAAAATTTCTGCTCAGATCTTCTCTGGGCACTGGGACCAAGATGTGAGCTGCCTT	4380
Q K E I L L T C S S G H W D Q N V S C L	(1460)
CCCGTGGACTGCGGTGTTTCCCGACCCCTCTTGGTGAAGTATCCAACTTCTCTCTCTCA	4440
P V D C C V P D P S L V N Y A N F S C S	(1480)
GAGGGAACCAAAATTTCTGAACGCTCTCAATCTCTTGTCTCCCAACCAAGCTGCAA	4500
E C T K F L K R C S I S C V P P A K L Q	(1500)
GGACTGAGCCCATGGCTGACATGTCTTGAAGATGGTCTCTGCTCTCTCCCTGAAGTCTAC	4560
G L S P W L T C L E D C L W S L P E V Y	(1520)
TGCAAGTTGGAGTGTGATGCTCCCGCTATTATTTCTGAATGCCAACTTGCTCTCTCTCAC	4620
C K L E C D A P P I I L N A N L L L P H	(1540)
TGCCCTCCAGCACAACCAAGCAGCTGGGCAACCATCTGCAATATGAATGCRAACCAAGGTAC	4680
C L Q D N H D V G T I C K Y E C K P G Y	(1560)
TATGTGGCACAACCTCCAGCGGTAAAGTCAACCAACAGCTCTGAGATACAAATGCCTG	4740
Y V A E S A E G K V R N K L L K I Q C L	(1580)
GAAGGTGGAATCTGGGAGCAAGGCAGCTGCATTCTCTCTGCTGTGAGCCACCCCTCTCT	4800
R G G I W E Q G S C I F V V C E P P P P	(1600)
GTGTTTGAAGGCATGTATGAATGTACCAATGGCTTCAGCCTGGACAGCCACTCTCTCTCT	4860
V F E G M Y E C T N G P S L P S Q C V L	(1620)
AACTGTACCAAGGAACGTGAAGAGCTTCCCATCTCTCTGCACTAAAGAGGGCTGTGGACC	4920
N C N O E R E K L P I L C T K E G L W T	(1640)
CAGGAGTTTAAAGTTGTGTGAGAATCTGCAAGGAGAATGCCCAACCAACCCCTCAGAGCTG	4980
Q E F K L C E N L Q G E C P P P P S E L	(1660)
AATTCTGTGGAGTACAAATGTGAACAAGCATATGGGATTGGTGCAGTGTGTCTCCCATTG	5040
N S V E Y K C E Q G Y G I G A V C S P L	(1680)
TGTGTAATCCCCCAGTGACCCCGTGTGCTACCTGAGAATATCACTGCTGACACTCTG	5100
G V I P P S D P V M L P E N I T A D T L	(1700)
GAGCACTGGATGGAACCTGTCAAAGTCCAGACCATCTCTCTCACTGGCCCGCTCAATGC	5160
H H W N E D V K V Q S I V C T G R R Q W	(1720)
CACCCAGACCCCGTCTTAGTCCACTGCATCCAGTCACTGTGAGCCCTTCCAAGCAGATGGT	5220
H P D P U L V H C I Q S C E P F Q A D G	(1740)
TGGTGTGACACTATCAACACCGAGCCTACTGCCACTATGACGGGGGAGACTGCTGCTCT	5280
W C D T I N N R A Y C H Y D G G D C C S	(1760)
TCCACACTCTCTCTCAAGAGGTCAATTCATTTGCTGCTGACTGTGACCTGGATGAGTGC	5340
S T L S S K K V I P F A A D C D L D E C	(1780)
ACCTGCCCGGACCCCAAGGCAGAAGAAATCACTAA	5376
T C R D P K A E E N Q *	(1791)

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Figure 2 (page 1 of 1)



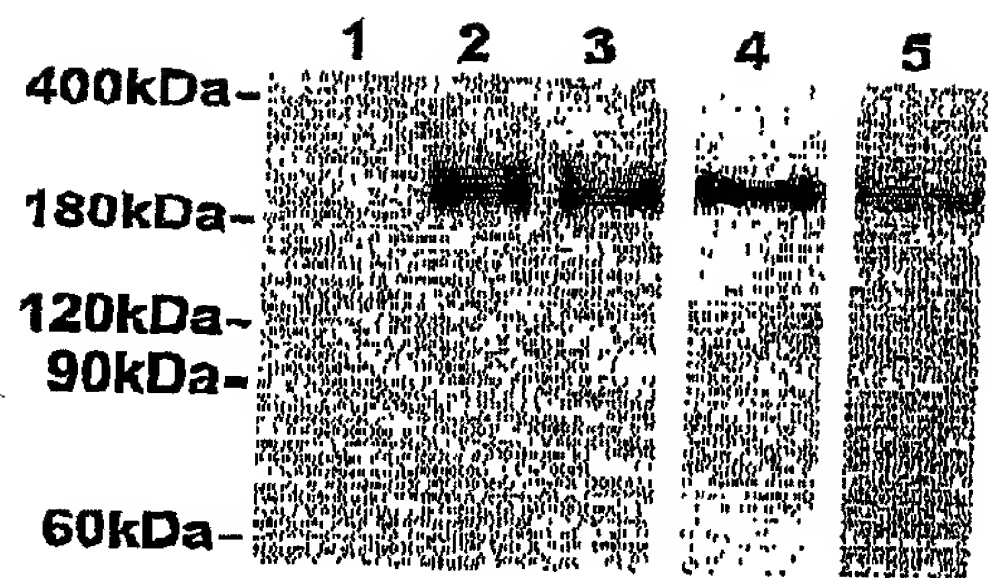
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Figure 3 (page 1 of 1)

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 PA mrlwswvlhiglslsalglglaSRPRARRDRPRAGRFRFRPAAGPATATRGFRFRFLAAAAAAGRAWAVRVRERQQR----- 120
 N-terminal residue of mature PAPP-A2 (Ser-234)↓
 PA2 AVESRAAFWVGDSFIGQSELLSDDAYLGNQRSKESLGEAGIQKGSAMAATTTTATFTTLNRFKFPETQRRGNWAKSRQRRQVWKRRAEDGQDSDGISSIFQWPKHSLKHRVKKSPPEESN 240
 PA ----- 240
 PA2 QNGGEGSYREAEFNSQVLFILYFSGRRERLLLRLPEVLAEIPREAFIVEAWVKPEGQNNFAITAGVTDNHTVSDKGWALGLRSGKDKGRDARFFTSLSLTDRAVCAITLISHSRVQ 360
 PA -----FARGATEEESFSPRALYFSGRGEOLKVLRADE-ELFRDAFTLQVWLRARQQRSPAVITCLYDRKESYISDDQCHVVGINTISDQNKDFRYTFELKIDRANQVTTINARSYL 192
 ↑
 N-terminal residue of mature PAPP-A (Glu-81)
 PA2 PGTWTEVAATYDGRHMAALYVDGTOVASSLDOSGPLNSPFWASERELLGCDSDRGHXYFRCLCTLVFWSTALDQSHIFQSSQMSCEEAATDINTLTASEFVNTEWVTRDQNYERLEV 400
 PA PGQWVYLAATYDGOFMKLYVNGAQVATSGEQVGGIFSFLLTQKQKVLMLGG--SALNHNRYRGYIEHFSLNKVARQOREILSDMETHGARTALPQLLLQENWDNVKHAWSFMKDGSSPKVEF 310
 ----- 310
 LNR1
 PA2 LQCFEZEPEILSDLOSLGCTVSDNYELISQYNQWFLAGEKVIRYQVNNIDDEGLNFIWSDGQIKLQHEALNEAFSRYNISWQLSVHQVHNSTLRHRVVLVMEPSKIGNDRHPOPE 600
 PA QNANG--FLDTSLEFFLNGGTLNTEVIAASYNQLSSFRQPKVYRVVNLVEDDHKNFTVTREQVDFQHQLALAFKQYNISWELDVLEVENSSLRRLILANADISKIGDENPOPE 478
 ----- 478
 LNR2
 PA2 EHPLETDGDEGR--LQGNYSNNKRDGGLSHVEENNNLNDFDGDEDPQVADVKTDPDPSFKRAYMSVKELKEALQLNSTHTFLNIYFASSVREDLAGAATWPDWKKDAVTHLGGIVLSP 719
 PA NHTLTGHDGGRRLHRLHFAVKKQHNGVADMDENYERFNFDGDEDPDPEITNTOTEDPDSFHRAYLDVNKLKNIKLDCSTHLINEPACSSSELACVATWPDWKEALMLLCEIVLP 540
 ----- 540
 PA2 AYGMFCHTDTIMHEVGVHLELYHFKGVSERESSENDKSKETVPSMETGDLADTAPTFKSELDEPEPTSDGAPTRFPDADFTNYMSYDDNNTDNFTPNQVARMHLYDLVYQGWTF 829
 PA SFYGMFCHTDTIMHEVGVHLELYHFKGVSERESSENDKSKETVPSMETGDLADTAPTFKSELDEPEPTSDGAPTRFPDADFTNYMSYDDNNTDNFTPNQVARMHLYDLVYQGWTF 660
 ----- 660
 PA2 SRKPTPIPIPFMVGOTNKSITIHWPPIISGVVYDRAAGSISGASTEDGTFROYHTASSRRVDSGCVWTFEEAVGFPDQVQEPESLQAWSPEVHLYHMNMVTFP-TEGSLLELLEQ 956
 PA SRKPAFVALAQVGLHTIDSVTLEWFFPIDGHYFRELZGQANHLLEGRILVQYASNASSFMPSPFGHWSPREAEGHPDVEQPKSSVRTWSPNSAVNFHTVTFAPPEPQCYLELEFL 788
 ----- 788
 PA2 HAVQADITILWVT--SFTMBSQVLHTEILQENKESVHLGLDTEHDIPLTKLH-VDGKVSQVKVYTFDERIEIDAALLTSQPHSPDPSGGRFVRYQVLRDPPEASGLPVVTHSHAK 1075
 PA YELVPESLTIHVTIVSTWDUSSGAVNDIKLLAVSGKNISLGFQNVFADVPLTIKLWDVGEEVYGIQIYTLDEHLEIDAAMLTSTADTFLSLQKFLKYKVVADPFLQMDVASIL-HLNKK 907
 ----- 907
 PA2 ITDVEVTPGOMYQYQVLAAGGELQASFFLNHIHGAPYSGDGKVSERLGEEDDGDVLSGDQESKVALEEGDNVUGEPSIHYMYEGDGIPEFERKTSIVLGIYTPDKCYLDQWASNA 1185
 PA FVMDPDLNLSVYQYVWITISGTESESEFPAVTYHRCQVYDGLIQDQKQMDMNKINGDCALFRQSVSTNIDEDAPYFADGDCVPEERKQTSIKDQGVYTPQGFIDQWASNA 1027
 ----- 1027
 PA2 YSSHEDEKKKIPVSLUTCDEHS-LLETRYHDPDLNARPLTGWFFVASENETQDDRETEQESLKKEDZYVLKVQFNAFGEARAIFIFLTDDGLVPEBHQPTVTLYLTDVRCGNMSTGTY 1314
 PA EVSHQDQD--PFWVVIIGQPAASQVARKVIDLBSXEQMANYFATGYTYSQLAQT-----FWLRATFHQFVARAVFVHVTIDGTIYGDQKQETISVQLLDEKDSHDLGLH 1135
 ----- 1135
 SCR1
 PA2 GLGQNNFLIINVTHHQNVLFPHHTSVLLNFPSEFRVCGIQAVALRTGSRIGLSAPNNIYSEDSQNHQGSZHNKSGKQDPSLEEDHADVNGTSISFGMLNKAITQORGFALQASSG 1434
 PA VLSEKNNFLIINVTHHDSQFFYHNSQAVKVSFSEFLVAISQVALRSDFNFDPVTLSSIQ-RGETYSPASQSVHFASEKTD--PELAVENASLNNSSSDRYHGACITVSWRTGYVLQIRRD 1253
 ----- 1253
 SCR2
 PA2 QYIRFMQR--LILLTSGSHMDQNVSLLEVDPVDPFSLVNYANFSSEGTKFLKPSSTSVPEAKLQGLSPNLTLEDLGLWSLPEVYKLEDAFFITLNNANLLPHLQDNNDVGTIF 1552
 PA DELIKSQTGFSVTVITEGKWNKQVRLVEVDGSDPDHNOVYAASFSPEGTTFSSGSGFQAHPAQLKNNSLITMEDCLWSTFPAFLTFLAPPPVFNADLOTAREENKHKVQSEK 1373
 ----- 1373
 SCR4
 PA2 KYKPKPGYVAESAEGKVRNKLKLTQALEGGIWSOGSAPVUTPEPPEPVFEGMYETWOFSLDSQVLMN-----QRRKLPIILNWRGAWTQKFLSENLOCEPPDPPELSN-VZYK 1666
 PA KYKPKPCYHVDSSSR-KSKQAPKQSTQPCRWQECARVDVTDGDDPKFGLYQRTNGFQFNEERIKKEDSDASQGLSNVIEHWDCTWNGSTVVEQEMQGGQVPE-NELNWNKLQ 1491
 ----- 1491
 LNR1
 PA2 EGGYGIGAVLSPILVTFESDFVMLPENITADTLENNMEPVKQSVITGRRQNHDPVLVNLQSEFPQADGMDTINNRAYHNDGGLSSTLSSKKVIPFAADHLDL-ELFRDF 1705
 PA EGGYAISSERATCLDHMEGICITLMMVIVRDIPNWLNETRVERVYTAGLWYHPALHLYKGLLEFFMGDNVADAINNRAYHNDGGLSSTLSSKKVIPFAADHLDL-ELFRDF 1611
 ----- 1611
 PA2 KASENQ----- 1771
 PA QACDMSKDLRGYSHG 1627

Figure 4 (page 1 of 1)



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Figure 5 (page 1 of 1)



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Figure 6 (page 1 of 1)

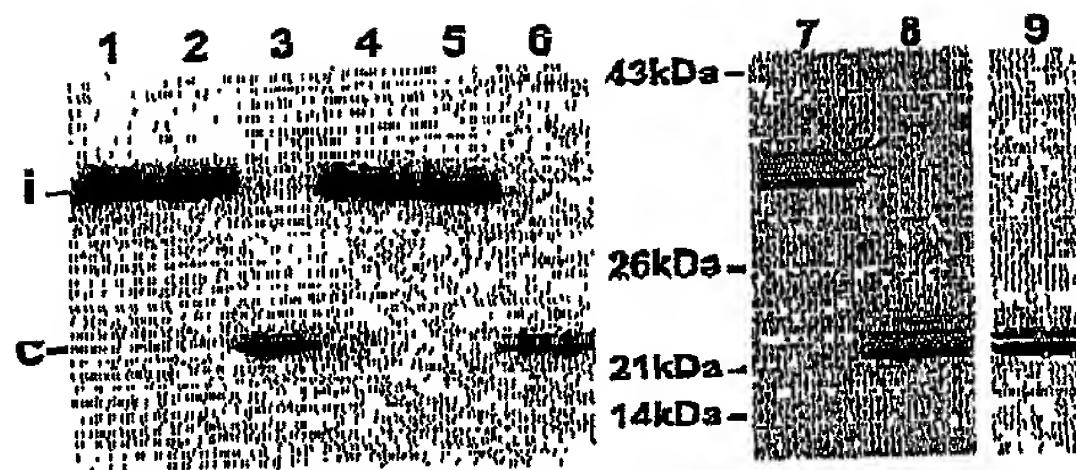


Figure 7 (page 1 of 2)

TCCTTCTGCT

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AATCAGGTGC	TGTTGGAAGG	AGAACGTTGT	TCCCTGGGGG	CCAACCTTCG	AAGACCCAGA	180
GCTTCTCCAC	AGCATCACCT	CTTGGGAGTC	TACCCAGCA	GGGCTGGGAA	CTACCTAAGG	240
CCCTACCCCG	TGGGGGAGCA	AGAAATCCAT	CATACAGGAC	GCAGCAAACC	AGACACTGAA	300
GGAAATGCTG	TEAGCCTTGT	TCCCCCAGAC	CTGACTGAAA	ATCCAGCAGG	ACTGAGGGGT	360
GCAGTTGAAG	AGCCGCTTCC	CCCATGGGTA	CCCATAGTGC	GTATTGGGCA	ATCTGAGCTG	420
CTGGGAGATG	ATGACGCTTA	TCTCGGCAAT	CAAAGATCCA	AGGAGTCTCT	AGGTGAGGCC	480
GGGATTACAA	AAGGCTCAGC	CATCGCTGCC	ACTACTACCA	CCGCCATTTT	CACAACTCTG	540
AACGAACCCA	AACCAGAGAC	CCAAAGGAGG	GGCTGGGCCA	AGTCCAGGCA	GCCTCGCCAA	600
CTGTGGAACA	CCCGGGCCGA	AGATGGGCAE	GGAGACTCCG	GTATCTCTTC	ACATTTCCAA	660
CTTTGGCCCC	AGCATTCCTT	TAAACACAGG	GTCAAAAAGA	GTCCACCCCA	CCAAAGCAAG	720
CAAAATGGTG	GAGAGGGGTC	CTACCGAGAA	GCAGAGACCT	TAACTCCCA	AGTAGGACTG	780
CCCATCTTAT	ACTTCTCTGG	GAGCGGGGAG	CCCTCTCTGC	TGGGTCCACA	ACTGCTGGCT	840
GAGATTCCCC	GGGAGGCGTT	CACAGTGGAA	GCCTGGGTTA	AACCGGAGGG	AGGACAGAAC	900
AACCCAGCCA	TCATCGCAGG	TCTCTTTTAT	AATGCTCTCC	ACACTGTCTG	TGACAAAGGC	960
TGGGCCCTGG	GGATCCGCTC	AGGGAAGGAC	AAGGGAAAGC	GGGATGCTCG	CTTCTTCTTC	1020
TCCCTCTGCA	CCGACCGCGT	GAAGAAAGCC	ACCATCTTGA	TAGCCACAG	TCCCTACCAA	1080
CCAGGCACAT	GGACCCATGT	GGCAGCCACT	TACGATGGAC	GGCACATGGC	CCTGTATGTG	1140
GATGCCACTC	AGCTGGCTAG	CACCTACAGC	CAGTCTGGTC	CCCTGAACAG	CCCTTCTATG	1200
GCATCTTGCC	GCTCTTTGCT	CTTGGGGGGA	GACAGCTCTG	AGGATGGGCA	CTATTCTCGT	1260
CCACACCTGG	GCACACTGCT	TTTCTGGTGG	ACCBCCTCTC	CACAAAGCCA	TTTTCAACAC	1320
AGTTCTCAGC	ATTCAAGTGG	GGAGGAGGAA	GGGACTGACT	TGGTCTTGAC	AGCGAGCTTT	1380
CACCTCTCTA	ACACAGAGTG	GGTTCCTTTT	AGAGATGAGA	AGTACCCACG	ACTTGAGGTT	1440
CTCCAGGGCT	TAGAGCCAGA	GCCTGAGATT	CTGTCCCTCT	TCCAGCCCCC	ACTCTGTCCG	1500
CAAAACGTCT	GTGACAATGT	GGAAATGATC	TCCAGTACA	ATGGATACTG	GGCCCTTCCG	1560
GGAGAGAAGG	TGATACGCTA	CCAGCTCTGT	AACATCTCTC	ATGATGAGGG	CCTAAACCCC	1620
ATTGTGAGTG	AGGAGCAGAT	TCTCTCTGAC	CACGAGGCAC	TGAATGAGGC	CTTCAGCCGC	1680
TACAACATCA	CCTGCTCCCT	GAGCTCTCAC	CAGCTCCACA	ATTCCACCTT	GGGACCCCGG	1740
GTGTGCTTGG	TGAATCTGTA	GGCCAGCAAG	ATTGGCAATG	ACCATTTGTA	CCCGGAGTGT	1800
GAGCAGCCAC	TCACAGGCTA	TGATGGGGGT	GACTGCCGCC	TGCAGGGCCG	CTGCTACTCC	1860
TGGAACCGCA	GGGATGGGCT	CTGTCACTGT	GAGTGTAAAC	ACATGCTGAA	CGACTTTGAC	1920
CACCACACCT	CCTGCGAGCC	CCAGGTGGCT	GATGTGCCCA	AGCCCTGCTT	TGACCCCTGAC	1980
TCACCCAGA	GGGCATACAT	GAGTGTGAAG	GAGCTGAAGG	AGGCCCTGCA	CCTGAACACT	2040
ACTCACTTCC	TGAACATCTA	CTTTGCCAGC	TCAGTGGCGG	AAGACCTTGC	AGGTGCTGCT	2100
ACCTGGCCTT	GGGCAAGGA	CGCTGTCACT	CACCTGGGTC	GCATTGTCTT	CAGCCACGCA	2160
TATTATGGGA	TGCCTGGCCA	CACCGACACC	ATGATCCATG	AGTGGGACA	TGTTCTGGGA	2220
CTCTACCATG	TCTTTAAAGG	AGTCAGTCAA	ACACAATCTT	GCAATCACCC	CTCCAGGAG	2280
ACAGTGGCAT	CCATGGAAAC	GGGAGACCTC	TGTGCCGACA	CCGCCCCAC	TCCCAAGAGT	2340
GAGCTGTGCC	GGGAACCAAC	CCCCACTAGT	GACACCTCTC	GCTTCACTCG	CTTCCCAGGG	2400
GCTCCGTTCA	CCAACATCAT	GAGCTACACG	GATGATAACT	GCACTGACAA	CTTCACTCTT	2460
AACCAACTCC	CCCGAATGCA	TTCTTATTTG	GACCTAGTCT	ATCAGCAGTG	GACTGAAAGC	2520
AGAAAGCTCC	CCTCCATCTC	CATTCCACCT	ATGCTCATCG	GACAGACCAA	CAAGTCCCTC	2580
ACTATCCACT	GGCTGCTCTC	TATTAGTCCA	GTTGTATATG	ACAGGGCCTC	AGGCAGCTTG	2640
TGTGGCGCTT	GCATGAAGA	TGGGACCTTT	CGTCAGTATG	TGCACACAGC	TTCTTCCCGC	2700
CCGCTCTCTG	ACTCTCTCAG	TTATTGGACC	CCAGAGGAGG	CTGTGGGGCC	TCCTGATGTG	2760
GATCAGCCCT	GCGAGCCAG	CTTACAGGCC	TGGAGCCCTG	AGCTCCACCT	CTACCACATG	2820
AACATGAGGG	TCCCTTGGCC	CACAGAGGCT	TGTAGCTTGG	AGCTGCTCTT	CTAACACCCU	2880
GTCCAAGCCG	ACACCTTCAC	CCTGTGGGTC	ACTTCTTCTT	TCATGGAGTC	CTCGCAGGTC	2940
CTCTTTGACA	CAGAGATCTT	GCTGGAAAAC	AAGGAGTCAG	TGCACCTGGG	CCCCCTAGAC	3000
ACTTTCTCTG	ACATCCCACT	CACCATCAAA	CTGCAGCTCC	ATCCCAAGCT	CTCGGGGGTG	3060
AAAGTCTACA	CCTTTGATGA	GAGGATGAGG	ATTGATGTCG	CACCTCTGAC	TTCTCAGCCC	3120
CACAGTCCCT	TGTCTCTCTG	CTCCAGGCTT	GTCACTTACC	AGGTTCTCTG	CGATCCCTCA	3180
TTTGGCAGTG	GTCTGCCCCG	GGTGGTGACA	CATTCTCACA	GGAAGTTTAC	GGACGTGGAG	3240
GTACACCTTC	CACAGATCTA	TGATACCAAA	CTTCTAGCTG	AAGCTGGAGG	AGAACTGGGA	3300
GAAGCTTCTG	CTCCTCTGAA	CCACATTCAT	GGAGCTCTCT	ATTGTGGAGA	TGGGAAGGTG	3360
TCAGAGAGAC	TGGGAGAAGA	GTGTGATGAT	GGAGACCTTG	TGAGCGGAGA	TGGCTGCTCC	3420
AAGGTGTGTG	AGCTGGAGGA	AGGTTTCAAC	TGTGTAGGAG	AGCCAAGCCT	TTGCTACATC	3480
TATGAGGGAG	ATGGCATATG	TGAACCTTTT	GAGAGAAAAA	CCAGCATTTG	AGACTGTGGC	3540
ATCTACACTC	CCAAAGGATA	CTTGGATCAA	TGGGCTACCC	CCGCTTACTC	CTCTCATGAA	3600
GACAGAGAGA	AGTGTCTGTG	TTCTTGGTGA	ACTGGAGAAC	CTCATTTCTT	AATTTGACAA	3660
TCATACCATC	CAGATTTACC	CAACCACCTT	CCCCTAATCT	GCTCCTTTCC	CTCTCTTCCC	3720
AGTGAAGATG	AAACTCAGGA	TGACAGGAGT	GACAGCCAGG	AAGGTAGCCT	GAAGAAAGAG	3780
GATCAGGTTT	GGCTCAAACCT	CTCTTTCAAT	AGACCAACCA	ACCCAGAGGC	AATTTTATTT	3840
TTTTTGACAA	CTGATGGCCT	AGTTCCCGGA	GAGCATCAGC	AGCCGACAGT	GACTCTCTAC	3900
CTGACCGATG	TCCCTCCAACT	CAACCACTCT	CTTCCAACTT	ATGCACTCTC	ATGCCAGCAT	3960
AATCCACTGA	TTATCAATGT	GACCCATCAC	CAGAATGTCC	TTTTCCACCA	TACCACCTCA	4020
GTGCTGCTGA	ATTTCTCATC	CCCAAGGGTC	CCCATCTCAG	CTGTGGCTCT	AAGGACATCC	4080
TCCCGCATTG	GTCTTTCTGG	TCCAGTAAC	TGCATCTCAG	AGGACGAGGG	GCAGAATCAT	4140
CAGGACAGAG	GCTGTATCCA	TGGGCCCTGT	GGGAAGCAGG	ACAGCTGTCC	GTCAATGCTG	4200
CTTGATCATG	CTGATGTGGT	GAACTGTACC	TCTATAGGCC	CAGGTCTCAT	GAAGTGTGCT	4260
ATCACTTCTC	AAACGGGATT	TCCCTTTCAG	CCGAGCAGTG	GCCAGTACAT	CAGGCCCATG	4320

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CAGAGGAAA	TTCTGCTCAC	ATGTTCTTCT	GGGCACTGGG	ACCAGAATGT	GAGCTGCCTT	4380
CCCGTGGACT	GCGCTCTTCC	CCACCCGCTC	TTGCTCAACT	ATCCAAACTT	CTCCTGCTCA	4440
GAGGGAAACA	AATTTCTGAA	ACGCTGCTCA	ATCTCTTGTC	TCCCACCAGC	CAAGCTGCAA	4500
GGACTCACCC	CATGGCTGAC	ATCTCTTCAA	GATGGTCTCT	GGTCTCTCCC	TGAAGTCTAC	4560
TGCAAGTTGG	AGTGTGATGC	TCCCCCTATT	ATTCTGAATG	CCAACTTGCT	CCTGCCCTAC	4620
TGCGTTCAGG	ACAAGCCAGA	CGTGGGCACC	ATCTGCAATG	ATGAAGCCAA	ACCAGGGTAC	4680
TATGTGGCAG	AAAGTCAGAA	GGGTAAAGTC	AGGAACAAGC	TCTGAAGCAT	ACAATGCCCT	4740
GAAGGTGGAA	TCTGGGAGCA	AGGCAGCTGC	ATTCTGTGG	TGTGTGAGCC	ACCCCCCTCT	4800
GTGTTTGAAG	GCATGTATGA	ATGTACCAAT	GGCTTCACCC	TCCACAGCCA	GTGTGTGCTC	4860
AACCTGTAAC	AGGAACGTGA	AAAGCTTCCC	ATCCTCTGCA	CTAAGAGAGG	CCTGTGGACC	4920
CAGGAGTTTA	AGTTGTCTCA	CAATCTCCAA	GGAGAATGCC	CACCAACCCC	CTCAGAGCTG	4980
AATTCTGTGG	AGTACAAATG	TGACACAAGG	TATGGGATTT	GTGCAGTGTG	TTCCCCATTG	5040
TGCTCAATCC	CCCCCACTGA	CCCCCTCATC	CTACCTCAGA	ATATCACTGC	TGACACTCTG	5100
GAGCACTGGA	TGGAACCTGT	CAAAGTCCAG	AGCATTGTGT	GCACTGGCCG	GCGTCAATGG	5160
CACCCAGACC	CCGTCTTACT	CCACTCCATC	CAGTCATGTG	AGCCCTTCCA	AGCAGATGGT	5220
TGGTGTGACA	CTATCAACAA	CCGAGCCCTAC	TGCCACTATG	ACGGGGGAGA	CTGCTGCTCT	5280
TCCACACTCT	CCTCCAAGAA	GGTCAATTCA	TTTCTCTCTG	ACTGTGACCT	GGATGAGTGC	5340
ACCTGCGCGG	ACCCCAAGGC	AGAAGAAAT	CAGTAACTGT	GGGAACAAGC	CCCTCCCTCC	5400
ACTGCTCTAG	AGGCAGTAAG	AAAGAGAGGC	CGACCCAGGA	GGAAACAAGG	GGTGAATGAA	5460
GAGAGACAAT	CATGAATGG	AAAGAAGAGG	AAGAGCATGA	AGGATCTTAT	AAQAAATCCA	5520
AGAGGATATT	GATAGCTGTG	AACAGTTTCA	TCAAGTAGCC	CAAGTAGGAG	AGAATCATAG	5580
GCAAAAGTTT	CTTTAAAGTG	GCAGTTGATT	AACATCCAA	GGGAAATATG	ATAGATATAT	5640
AAGGACCTTC	CTCCCTCACT	TATATTCTAT	TAAATCTTAT	CCTCAACTCT	TGCCCTGCTC	5700
TCCGCTCCAC	CCCCTGCCAA	CTACTCAGTC	CCACCCAAC	TGTAAACCAA	TACCAAAATA	5760
CTAGAGGAGC	AGTTGGCAGG	GATACTGTTA	ATACCCATT	TGAATGGATT	GCCATCTTTC	5820
ACAGCTTCTC	TGCTCTCAAG	TGCTCTTTTT	TCTTTTGTG	TAGTTTCCCT	TAAATATGGA	5880
AGTTAGTTAT	TAATTCTTTA	TAAGTATTTA	AACATAATTA	TATAAATATA	TTATATATAT	5940
TATATTTTTT	CCTCTTTACT	AAGCTAAAA	TTATTCATTG	TTCCACACAT	GCTGCTGTGA	6000
AGTTACACTT	CAAGATGAAT	GTTGAGACTT	TGAGGACAGA	AAGGCAACTT	ATTTTCCCAT	6060
CTTTCTATGG	ATGCGGATTC	GCAGGTTGAA	TGGGAAGTAC	AGAGGAGAG	AGAGTATTTA	6120
GATGGAATTC	TGGATGCTAG	CATGTAAAGC	TAATCATCTT	TTTTTTTATG	ACCTGGGACC	6180
TGGGCCCATC	TTATGACCAA	GGCAGTGGGG	AGTTGGAATG	GTGCTACTAA	GAGGCATAGG	6240
AAGTTGAGTG	TGAATACCAAT	TGGTGAATGG	TCCAGAGCAA	CTACACTATC	CTTCTTCAAT	6300
ATCTGTCCAC	AAGGATATA	CTACTTTTTC	TCAACTTCTC	AGAACTTCCA	ACTGGAGTCC	6360
GTGAGACCTA	GGATTTTCTG	CACTTCCACA	CATCCCTGTT	CCAAGTCTGG	CTGTCAGCCA	6420
GTCAACAAGT	TGTACTATAG	GCCCATTTCT	TGATCACCAG	GATTACAGGA	ACTCACACAC	6480
TCTTCATACT	TGGCCTGTAG	TGCTACTTCT	TGTTAGAAGT	CTCCAAGTCT	GGCCAGTCCAC	6540
ATGACCAAGT	GTGATTTTTT	CTGGAGGAA	AATTTTATGG	AAATGATATA	GGGGAAAGGT	6600
GGGACCAATC	CAACAGACAG	GCAAGAGCTG	TCAGGCTTAA	ATCCAGGCCC	GGGCATGAGA	6660
ATGGAAGTGA	TCAGGGAGAC	TGGGTCTCTG	TTCCAAGTCT	CCAAAGAAGA	CCAAAGTGGG	6720
TCCCTTGAGC	AATGAAGAAT	CTGAGATAAA	TTCTCTTCAA	GTATCATGTA	CAAAATCTGT	6780
GAGCCAGAGA	TTTTGACTTG	AGCAAGCCAT	GGAAATGCAT	GGAGCAACCC	TGACACTCTC	6840
TGGGGAGACA	GAAAGATTTT	AACATTTTAA	TGTCCATTTT	GTGTTTTTAA	CCCTTTCTTA	6900
TCCAATAGAT	GGAAATGCAC	TGAATGACC	ATATTAAGCC	TCTCTCTATT	TGACATCCAG	6960
GCTCACTGGG	ATGTGATCTA	CTGCAGTTAC	ATTTTCTTGT	AACGGTTTCT	GGATTAGACC	7020
CTAGGGAAAG	TGACTAACCA	GCCAGTTTCT	CTTAAACATT	CTACTTTTAC	TCATTTTACG	7080
ABGGCTGTGA	GTGAGGCTTG	TCCTCTTTAA	AGTTTCTTCT	CCAATGGAAA	CCAAGAACAG	7140
ACAAAATTTA	CACCTCAGCT	GTGGTCTGTT	CTCATCTTCT	GCTCTTTTGC	TTTGACCCACA	7200
GTTTTTCTAC	TCTTCCCATC	AACACTAGAG	CAATGGCTGT	GCAAATAGGA	ATAGGAAATA	7260
CTACCACAAT	GATAGAAATA	TTATCCACAC	TATCAGCTAG	GGAGAACAA	TATCCTGAAA	7320
GAGGATAAAA	CACGAATAAG	GTGATGTACC	CACATTAATC	TGTGGGTTTG	TGGAATGAGG	7380
GTGCAAAACT	TATTCGAAAA	AGGAAGAGGC	AGAGTTCAAC	CATTCAAAA	AAACCTTTTG	7440
TCTACTAATC	TCTAGTGTAA	AGAAAATGTA	GTTCAGATAC	CATTCATTGT	CTTGGGTCAT	7500
GCTTAGTGCC	CCCAAGAAAG	CAACATATT	TATTCCTGGG	ATTCGTATAG	GCTTCAATAT	7560
GCAAGGACA	ATGGAAAAGT	TTAGACACTC	TATTTTCAA	ATTTTATATA	CTTGTTTTAT	7620
TGGGGAAAAT	GTCCAAATTG	CTAGACACAT	TCTAGTTCT	GCCTTGGAGA	ATCCTACT	



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